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UNITED STATES DEPARTMENT OF THE INTERIOR
STEWART L. UDALL, SECRETARY
Fish and Wildlife Service, Clarence F. Pautzke, Commissioner
Bureau of Commercial Fisheries, Donald L. McKernan, Director

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MALTA'S FISHING INDUSTRY, 1964^{1/}
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I. INTRODUCTION

FISH & WILDLIFE SERVICE

Although Malta is in the middle of the Mediterranean, it has only a small fishing industry. The annual catch, which amounted to only 26,343 cwts. in 1962, 29,815 cwts. in 1963 and to an estimated 26,855 cwts. in 1964, is extremely small for a population of 325,000. The catch amounts, on the average, to only about 3 oz. per week per capita!

The offshore fishing grounds are fairly favorable, and there are some good grounds 15 to 70 miles distant from Malta but with the competition of the Sicilians and mainland Italian trawlers, it is necessary for Maltese fishermen to look farther afield. It is in this regard particularly that they need some technical assistance. Malta's fishing fleet is more than adequate for coastal fishing and there are 11 trawlers capable of distant fishing but the latter are not being used to their best advantage due to the lack of technical advice and guidance. The crews are capable and eager to learn although they are reluctant to go to sea for extended periods. Fishing methods are traditional and seasonal. Long line fishing has recently been introduced with success but an overall improvement in fishing techniques is required and for that purpose as well technical assistance is sorely needed. The handling and distribution of the fish catch is for the most part primitive and a considerable investment in equipment as well as technical assistance is required. The Government of Malta has provided for an outlay of £ 384,793* under the second five year plan (1964-69) for the fishing industry as a whole but little of this is for technical assistance. Research has been neglected and in addition to that provided for in the second year plan, there is a great need for technical assistance in this regard as well.

*£1 = \$2.80

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1/ Information supplied by United States Embassy, Valletta, Malta.
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An interest in assisting the fishing industry of Malta has been shown by the Government of the Republic of China and a Maltese team is scheduled to visit Taiwan in January to study its fishing techniques. Malta would welcome the assistance of other countries as well and particularly that of the Food and Agricultural Organization and private research institutions.

II. PRESENT FISHING GROUNDS, BOATS, CREWS, GEAR, METHODS AND HANDLING

A. Grounds:

1. The fishing grounds bordering the coast lines of Malta and Gozo are of little importance as the fish are small as a rule and those of sufficient size are very limited in number.

2. Offshore fishing grounds are of considerable importance. One is Southwest of Gozo, occupying an area of 70 square miles of very productive ground if not too heavily fished. It contains hake, red mullet, shrimps, squid, rays, cuttlefish, dogfish and skate (see page 11). The other is known as "Sikka L-Bajda", which is off St. Paul's Bay. It is a night fishing ground with a sharp bottom. These offshore fishing grounds are favorite locations for trawling by Maltese fishermen. In the southwest Gozo grounds, the regular four hour haul usually nets 200 kilograms of fish, which is said to be very favorable compared with the usual haul in Italy. The usual procedure at Sikka L-Bajda is to make four one hour hauls at night and they together also usually total 200 kilograms of fish.

3. The more distant fishing grounds for Maltese fishermen range from 15 to 70 miles away. In the north is the "North Scalambri" west of Sicily. It is a good ground with productive patches and contains hake, red mullet, gurnard, squid, and small crawfish. South of that is "Mid Scalambri", which is a seasonally productive fishing ground and contains large scad, hake, squid and shrimp. Off the north west coast of Gozo is the "North west Bank", which is an untried ground. Echo surveys have indicated a good trawling bottom over this section. To the southeast of Malta is the "South East Filfla" ground, which is very productive, although there are some obstacles in depths over 100 fathoms. It contains very large skate, angleshark, hake, red mullet and gurnard. To the east of Malta, about 40 miles, is the "Pietruzzo" ground, which is seasonally productive. It is, however, heavily fished by Italian trawlers.

4. The bottom fishing grounds of the Central Mediterranean, which are exploited by the Maltese along with the Sicilians or by the Sicilians alone, are shown in the attached chart (see page 11). Particularly noteworthy, in addition to those described above, is

the Medina Bank in which the Maltese are not active at present but which they hope to operate soon.

3. Maltese fishermen do not fish outside of the Central Mediterranean, or ever go, of course, into the Atlantic.

B. Boats.

The number of fishing boats in 1963, the latest period for which statistics are available, totalled 822; it included among those that were power propelled, 11 trawlers, 11 motor fishing vessels, 244 Luzzus (35 - 40 ft. native craft) 39 Firilli (18 - 25 ft.), 211 Caiques (12 - 18 ft.), and about 110 other small fishing craft. Rowing boats used for fishing numbered 10 Luzzus, 6 Firilli, 92 Caiques, and about 88 other small fishing boats. These did not include the 750 odd small craft belonging to amateur fishermen.

The Luzzu is well adapted to pelagic and is sufficiently versatile to operate by various methods ('Cainciolo, Karmizzati, and Tuna long lines). This three-seasonal fishing boat employs an all Maltese crew. The Luzzu, however, is not decked, and apart from the engines, cannot accommodate any navigational or fish detection instruments. Also, it is not equipped with a fish-hold.

Of the 11 trawlers which are over 50 feet in length (see page 12) only two are refrigerated, while the remainder are all insulated. Nine of these have a trawl winch; the rest have Lampara type winches. The average catch of the Maltese trawler ranges from 200 to 300 kilos per fishing day. A year round average daily catch might be near 250 kilos when the trawlers operate on the Sicilian shelf. Fortunately, the Maltese trawler is of a type that can engage in pelagic fishing between May and August (Cianciolo) and from September to late November on Karmizzati fishing.

C. Crews.

There are about 680 full time Maltese fishermen; some 200, in addition, engage in fishing during different seasons of the year. There is no system for training of crews and they are loath to go far afield. Usually they do not go out for over 30 hours at a time. The family in Malta is close knit and the husband is reluctant to leave his wife and children for more than one night at a time.

Although productive fishing grounds exploited by the Sicilians are nearer to Malta than to Sicily, little use is made of these areas and even those fishermen who have acquired larger and better equipped vessels generally tend to operate the same traditional grounds as their forefathers.

The Maltese fisherman is willing to learn. When it comes to new methods, the smallness of the community has an advantage because all fishermen know what results are being obtained by each method and fishing implement. As soon as they learn that conversion to a new method or modification of present gear will render better catches, they invariably change over with the least possible delay. For example, the whole industry, which is made up entirely of privately owned boats, changed over to nylon nets instead of cotton in only a matter of months. Only recently, the operation of tuna type long lines became a fishing method of major importance in a matter of weeks. Fishermen are informed of developments abroad by Sunday broadcasts and a Fisheries Department monthly folio, but they want to be shown not told. It is found that unless local fishermen are given the opportunity to see for themselves in a practical way the advantageous results obtained by a change-over or modification, they will not be able to judge what is better for their work and consequently take a very long time to adopt it.

D. Gear.

In 1964, the Fisheries Department issued gear licences for the following: 124 trammel and gill-nets; 43 shore seines; 28 shellfish dredges; 42 cast nets; 22 purse seines (cianciolo); 9 trawl nets; and 100 Kannizzati sites.

The Government Fishing Equipment service is designed to introduce modern gear and to make it available to the fishermen at minimum cost. It has become extremely popular among fishermen. In the course of 1962, the following equipment was supplied:

1.	Cordages to the value of	£4,406
2.	Nets to the value of	£2,700
3.	Fishing lamps " "	430
4.	Wire ropes to the value of	937
5.	Corkwood " " " "	655
6.	Recording Paper " " " "	53
7.	Sundries " " " "	38
		£9,220

E. Methods

Trawling

Intensive trawling is carried out in the Western and Middle Mediterranean (North Scalambri, Mid Scalambri, Pietruzzu, North West Bank, South West of Gozo, St. Paul's Bay and South East of Filfla) with total disregard as to the mesh size of the cod-end with the result that there has been a very sharp decline of marketable demersal fish in recent years.

Lampara

During the months of May to August, most fishermen land mackerel, bogue and skad by the Lampara method of attracting fish under very powerful kerosene pressure lamps and encircling them in ring nets.

This method which was copied from Italian fishermen fishing in Maltese waters in 1932, still makes use of kerosene pressure lamps instead of the more up-to-date electric light powered by generators.

The lack of fishfinding equipment and puretic power blocks are also felt during this season.

Kannizzati

From August to November, fishermen change over from Lampara to Kannizzati fishing, which exploits a remarkable habit of migratory dolphin-fish (coryphene) and pilot fish to collect under any floating object in the open sea; by anchoring cork floats at some mile intervals on a coarse running out to some 100 miles from the coast and landing in encircling seines the fish which collect under the floats. During this period, fishing activity extends to the North African continental shelf and fishermen may make trips lasting up to three days.

Though dolphin-fish account for more than 30% of the total landings, nothing is known regarding their migration and behavior.

Long Lines

Tuna type surface long lines operated by the Sicilians and recently adopted by local fishermen are used for winter fishing and have practically replaced Lampara. This method has afforded record catches of swordfish, and some blue and thresher shark but very little, if any, tuna. With the absence of thermometers, no temperature measurements are taken before setting the long lines. Only kerosene lamps are used to indicate the floats at night and these are often swept by wind and current. For this reason, tuna type long lines can be operated only in calm waters.

Other Methods

From the end of December to the following April, no particular fishing method, except for the recently introduced long lines, is employed. It is considered that during these months a modified type of midwater trawl might be introduced for fish which stay just above the bottom. As this type of fishing does not scrape the bottom it is thought it might be operated in weather that is too rough for bottom trawling and might also prove effective during other seasons.

F. Fish Handling and Distribution

On decked boats, the catch is packed in wooden boxes and stored in the fish-room. On open boats, it is packed only in wooden boxes and sometimes covered with crushed ice and wet canvas. Only large fish are gutted and cleaned before entering harbor.

Apart from the Fisheries Department's experimental training vessel, only one other boat has refrigerated fish-hold. All other boats are dependent on two privately owned cold storage plants at the Marsa for their ice. Fishing time is often lost while boats await the arrival of trucks with the ice blocks from plants several miles away. Crushed ice or flakes are not available.

When boats have a large enough catch to justify the trip to the Grand Harbor, the fish are landed at the Valletta wholesale fish market where they are publicly auctioned by middlemen (pitkali) to fish hawkers. Trucks belonging either to the middlemen or to the fishermen themselves may also transport the fish from the fishing ports to the Valletta fish market. These trucks are not refrigerated or insulated.

If the price of fish for the day is too low, the whole catch or a part thereof is again transported to one of the two cold storage plants at Marsa where it is kept until prospects of better prices are envisaged.

After buying from the wholesale fish market, hawkers carry the fish to the towns and villages and hawk it from unrefrigerated vans, carts or even wooden trays. No fish shops are in existence but some hawkers have wooden tables at public, retail meat and vegetable markets.

III.

GOVERNMENT ASSISTANCE

In order to inject more private initiative into fishing operations, the Minister of Agriculture instituted a fuel subsidy scheme in 1953. This consists of a rebate on the cost of fuel consumed by fishermen. Since this initial assistance, the fishing industry has received further assistance from the Government through 1) The marketing scheme, 2) The Fishing Equipment and Supply Service, 3) The Vocational Training Service, 4) The Loans and Grants (Financial Assistance) Scheme, and 5) The District Stations (Extension) Service.

Through the Loans and Grants (Financial Assistance) Scheme 1956, many improvements to craft were effected and a number of large vessels were acquired which were responsible for the introduction of new fishing techniques. However, the fishermen who owned the newly acquired vessels (capable of fishing with the Lampara and Kannizzati methods as well as trawling during mid-December to April/May) had had no previous experience in their operation and management. It happened that while one vessel of this type did very well when run by a commercial group with little fisheries experience, the opposite resulted for vessels owned by fishermen with no commercial experience of this level. There was moreover no government sponsored exploratory campaign for new fishing operations and owners of the larger decked vessels continued to operate in practically the same, traditional fishing grounds as they had been exploiting successfully with smaller and less expensive boats. Consequently, the performance of these large vessels became discouraging. Another discouraging factor was that while the luzzus are slipped free of charge in public slipways, trawlers are charged some £30 each time for the use of a slipway belonging to the management of the Malta Drydocks. After a short while, therefore, the Government transferred the emphasis of its financial assistance to smaller craft which are considered more versatile and therefore more compatible with the immediate requirements of the fishing industry.

In June 1963, £55,000 (£33,000 loans and £22,000 grants) were awarded to 65 fishermen. These amounts were utilized for the construction of 10 vessels of over 30 feet; the replacement of 22 kerosene by diesel engines, and the purchase by 23 fishermen of essential and modern fishing equipment. The contribution towards the investment by the fishermen was 20% in the case of craft, 30% for the purchase of equipment, and 60% for the replacement of engines.

The re-organization of the fishing industry on more efficient and economically productive lines has still a long way to go, although Maltese fishermen can be converted to new techniques. The policy followed in the first five year plan of giving grants and loans to fishermen for the purchase of larger boats and for equipment, will be continued during the next five years. The help given to the fishing industry in the past, and the services set up by the Fisheries Department, have instilled a degree of initiative in the fishermen. It is believed that larger catches could be achieved if the fishing industry were more remunerative for fishermen both ashore and afloat. The second five year plan, therefore, lays down a program of projects and schemes intended to help the fishing industry and to make it more profitable to fishermen. It provides for the allocation during the next five years of a total £384,793 divided as follows:

Improvements at Marsaxlokk: £37,980

Fishermen at Marsaxlokk, which is an important fishing center in Malta, labor under great handicaps because the width of the moles is far from sufficient for their purpose. It is therefore proposed to widen some 1,200 feet of runway which is the minimum needed in the present circumstances. It is hoped that this will provide a much needed space by fishermen for their fishing tackle.

Dredging of inner part of Marsaxlokk : £47,475

Several piers and slipways in the inner part of Marsaxlokk are unusable by fishermen for mooring, berthing and fueling purposes as their approaches have been completely silted up. This area will be dredged to a depth of 12 feet to make it navigable.

Construction of moles : £79,000

The old fish ponds at Marsaxlokk were dredged to a depth of 12 feet to provide safe anchorage during bad weather for all the craft based in that berth, and at Zurrieq, Ghar Iapsi and other adjacent areas. However, many facilities are lacking. Moreover, the banks are gradually subsiding, especially where there is no rock bedding and these tend to silt up the whole enclosure.

Provision is being made for the construction of a concrete embankment to render the boat enclosure accessible to craft, thereby achieving the aim for which the pond was originally constructed.

Extension of moles at Wied iz-Zurrieq : £11,605

At Wied iz-Zurrieq, one of the main fishing centers, the moorings available and the landing and other facilities are of a very primitive kind. The quays where fishing equipment can be hauled and where the "luzzi" can deposit their catches are almost completely lacking. These facilities are being provided by building a quay about 150 feet long.

Building of dwelling units : £16,988

Housing and storage accommodation in the vicinity of the creeks, where fishing boats anchor for shelter, are very poor. As a long-term measure, it is proposed to construct "fishermen's villages" near fishing centers. As a start, provision has been made in the plan to construct 10 housing units each with 4 small residential flats, and 20 stores at Marsaxlokk to meet the most pressing needs.

Sundry works at Fishing Centers : £25,320

The Fisheries Department is responsible for the renewal, maintenance and improvement of slipways all over the Islands. Some of these are in a bad state of repair, while others have no protective arms, making shipping and launching difficult in rough weather. The installation of hauling winches and small jib-cranes at several places is also needed. Provision is being taken to carry out such works in fishing centers.

Fishing Research : £21,520

This amount has been provided to acquire the services of a foreign marine biologist, for the training of a local officer, and for purchase of equipment.

Loans and Grants : £85,000

Maltese fishermen have been fishing since time immemorial in the inshore waters around these Islands. This has depleted the stock to such an extent that in order to expand the industry, it has become necessary to provide craft capable of operating in more distant waters and strong enough to withstand the heavy seas. The number of large and decked boats should therefore be augmented. Moreover, trawling activities have to be increased so that fishing in deeper waters can be undertaken. It is therefore necessary to continue to give assistance in the form of grants/loans for the purchase of larger boats and to help fishermen to obtain modern fishing equipment.

Expropriation of lands and old fishponds at Marsaxlokk : £8,998

This provision, which is a "carry-over" from the 1959/64 Plan, is meant to cover the cost of expropriation of land taken over at Marsaxlokk for use by fishermen.

Provision of two winches at Marsaxlokk and Wied iż-Żurrieq: £2,907

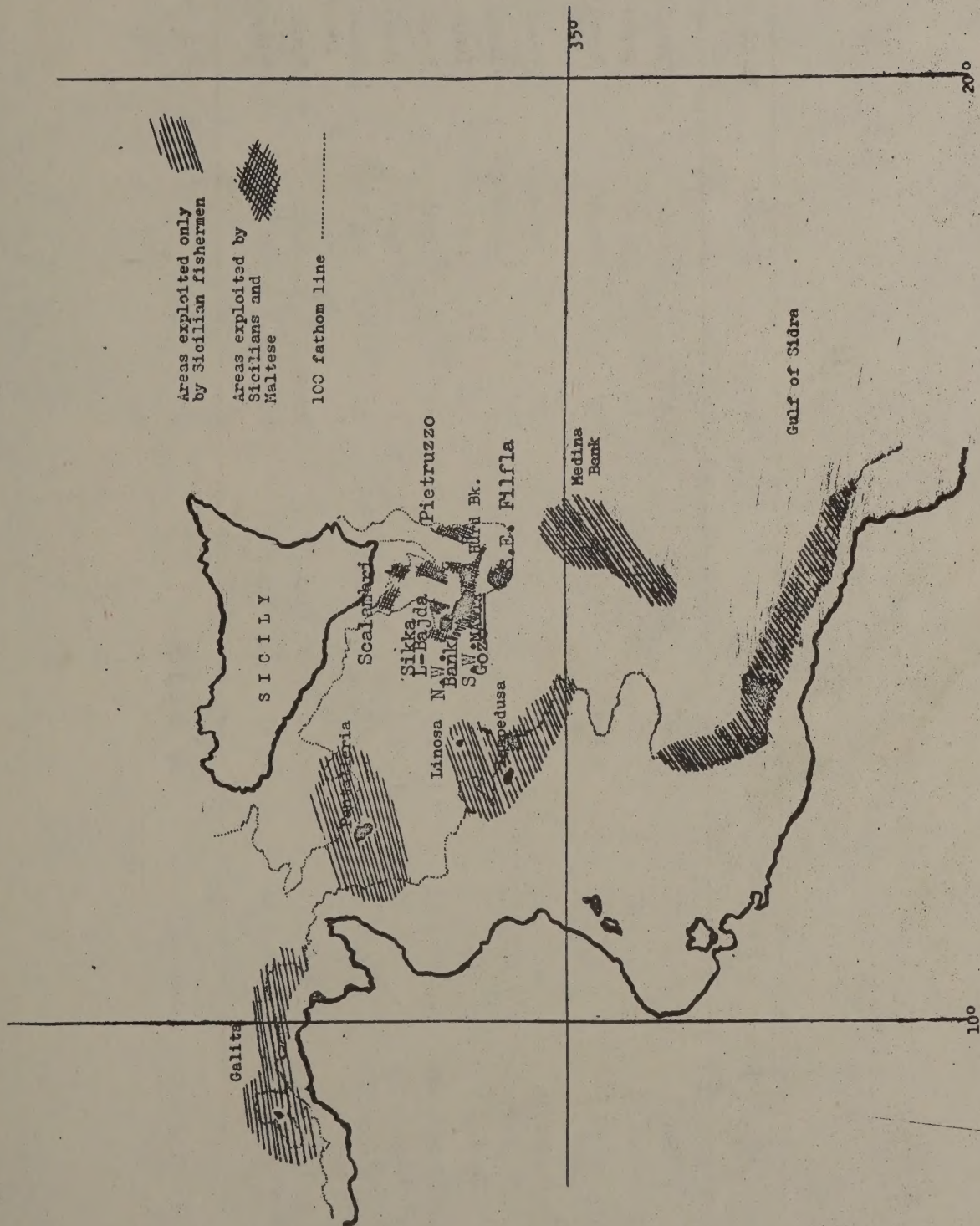
IV. RESEARCH

No serious attempt at research in respect to the fishing industry has ever been made in Malta. It is evident that without such research, no significant headway can be made. In addition to the marine biologist to be provided under the second five year plan, the requirements of the fishing industry call for the services of a "fishery scientist" as obtainable in U.S.A. and Japan.

A Vocational Training Officer of the Fisheries Department, who recently completed a fellowship in Fisheries Training and Research afforded by the Food and Agricultural Organization, and a local marine biologist at the Malta University are the only scientifically trained personnel. A twenty-three meter experiment vessel equipped with an ELAC echo sounder, radiotelephony/direction finding apparatus trawl winch, etc. is all that is available for research purposes. The ELAC echo sounder, however, is considered sufficient for locating new fishing grounds.

According to the Vocational Training Officer of the Fisheries Department, the following additional apparatus and equipment are required for fishing research:

- 1 deep-sea Combination (SCOP)
- 2 24-volt generators with underwater fishing lamps
- 2 P.H. meters
- 2 High speed plancton samplers
- 1 Automatic Temperature (Salinity, Density) recorder (TSD)
- 4 Meter-wheels
- 4 Bottom grabs
- 1 Puritic Power Block
- 1 Plancton microscope {complete with mirror microscope, deepfreezers, balances, dissecting instrument sets and trays measuring boards, salinity bottles, oxygen bottles, plastic jars, specimen jars}.
- 1 Luxometer
- 1 Spectrophotometer
- 4 Glass aquaria (complete with aerators, salt-water pumps, piping, automatic switches, jets.)



Craft over 50 feet
Size, deck machinery and fishing aids

Boats Name	Dimension in feet	Engine HP	Wishhold	Wireless	Sounder	Winch type
Hannibal	90 x 20	1 x 180	Ref.(1)	RT/IF	Asdio	Trawl
Rocky	93 x 23	1 x 200	Ins.(11)	RT	Depth	Trawl
Stella del Mare	72 x 15	1 x 165	Ref.	RT	Depth	Trawl/ Lampara
Mastalfio	72 x 15	1 x 150	Ins.	RT	Depth	Trawl
St. Katerina.	69 x 15	2 x 150	Ins.	RT	Depth	Trawl
Stinker	69 x 15	2 x 75	Ins.	Nil	Nil	Lampara
M. d. Pompei	69 x 15	2 x 150	Ins.	RT	Depth	Trawl
S. Giuseppe	67 x 20	3 x 120	Ins.	RT	Depth	Trawl
Madonna Tal-Karmnu	63 x 16	1 x 125	Ins.	RT	Depth	Trawl/ Lampara
St. Rita	56 x 14	1 x 110	Ins.	RT	Depth	Trawl
Mt. Carmel	50 x 14	2 x 67	Ins.	Nil	Nil	Lampara

(1) Refrigerated

(11) Insulated